

We claim:

1. A method for treating loss of near vision in a patient comprising:

form a peripheral zone in the cornea having a high refractive power to provide corrected near vision for the patient.

2. The method of claim 1 wherein said peripheral zone is exceeds about 5.5mm.

3. The method of claim 2 wherein said peripheral zone has a diameter of less than about 10mm.

4. The method of claim 1 wherein the refractive power of said peripheral zone is changed without changing the refractive power of a remaining central zone.

5. The method of claim 4 wherein said central zone has a diameter of about 5 mm.

6. The method of claim 1 further comprising changing the refractive power of a central zone of the cornea disposed concentrically within said peripheral zone to revert said refractive power to its value before the formation of said peripheral zone.

7. The method of claim 1 further comprising changing the refractive power of a central zone of the cornea disposed concentrically within said peripheral zone to treat said central zone for vision loss other than near vision deficiency.

8. A method of treating presbyopia in a patient comprising:

peripherally ablating a peripheral zone of the cornea, said peripheral zone extending from about 5.5 to about 10 mm to form a high refractive power peripheral cornea to correct said presbyopia.

9. The method of claim 8 further comprising leaving a central portion of said cornea untreated to provide distant vision for the patient.

10. The method of claim 8 wherein during said peripheral ablation, the optical characteristics of a central zone of said cornea used for distant vision are changed, further comprising providing treatment to said central portion to revert said central portion so that its optical characteristics are similar to the characteristics prior to the peripheral ablation.

11. The method of claim 8 further comprising changing the optical characteristics of a central zone of the cornea to correct said central zone for vision deficiencies other than near vision loss.

12. The method of claim 11 wherein said changing comprises performing ablation on said central zone.

13. A method of performing surgery on an eye with near vision deficiency comprising:

determining the characteristics of the optical characteristics of the eye;

determining a positive diopter correction for the eye;

determining a peripheral ablation profile corresponding to said positive diopter

correction; and

performing a peripheral ablation on the cornea using said peripheral ablation profile while a central portion of the cornea remains untreated.

14. The method of claim 13 further comprising treating said central portion after said peripheral ablation.

15. The method of claim 14 wherein said treating includes correcting said central portion to revert said central portion to optical characteristics similar to its characteristics prior to the peripheral ablation.

16. The method of claim 14 wherein said eye suffers from other deficiencies further comprising treating said central portion to correct said other deficiencies.

17. An apparatus for treating a patient's eye for near vision deficiency comprising:

a laser beam generator;

an optical network adapted to deliver a laser beam from said laser beam generator to the eye of the patient; and

a controller coupled to said optical network and said laser beam generator and adapted to provide a peripheral ablation on a peripheral portion of the cornea to increase the dioptic power of said peripheral portion thereby correcting the eye for the near vision deficiency.

18. The apparatus of claim 17 wherein said controller is adapted to deliver said peripheral zone of the cornea within an area between 5.5 and 10 mm.

19. The apparatus of claim 17 wherein said controller is adapted to leave a central portion of the cornea untreated during said peripheral ablation.

20. The apparatus of claim 17 wherein said controller is further adapted to provide a central ablation to said central zone after said peripheral ablation.

21. The apparatus of claim 20 wherein said controller is further adapted to provide said central ablation to restore said central zone to its condition prior to said peripheral ablation.

22. The apparatus of claim 20 wherein said controller is further adapted to provide central ablation to said central zone to provide treatment to correct a deficiency other than near vision deficiency.